

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Invertebrate Abstract

Element Code: ICMAL05360

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Stygobromus arizonensis*

COMMON NAME: Arizona Cave Amphipod

SYNONYMS:

FAMILY: Crangonyctidae

AUTHOR, PLACE OF PUBLICATION: J.R. Holsinger. 1974. Systematics of the subterranean amphipod genus *Stygobromus* (Gammaridae), Part I: Species of the Western United States, Smithsonian Institution Press, City of Washington.

TYPE LOCALITY: Near Fort Huachuca, Cochise County, Arizona.

TYPE SPECIMEN: Holotype, USNM 142778. J.L. Colehour, September 1963.

TAXONOMIC UNIQUENESS:

DESCRIPTION: Relatively small species, ranging from 2.5-10.0 mm long, with a shrimp-like appearance; without eyes or pigment. Largest female, 3.7 mm long; largest males, 5.0 mm long. Antenna 1 is 45-50 percent as long as the body and 40 percent longer than antenna 2; primary flagellum with 12-13 segments. Antenna 2, flagellum with 5 segments. Mandibles sub equal; spine row with 6 spines; palpal segment 2 with 5 setae on inner margin distally.

AIDS TO IDENTIFICATION:

ILLUSTRATIONS: Line drawings (Holsinger 1974)

TOTAL RANGE: Flying "H" Ranch and a small spring in a mine at Paradise, Cochise County, Arizona.

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: In general, amphipods are much more active at night than during daylight hours. As an amphipod swims it often rolls over on its side or back (hence the name

“sideswimmer”). Fishes are the chief predators but birds, predaceous aquatic insects and amphibians also take a toll.

REPRODUCTION: Most common species breed some time between February and October, depending largely on water temperatures.

FOOD HABITS: In general, amphipods are voracious feeders, all kinds of animal and plant material is consumed. Only rarely do they attack living animals, but freshly killed animals are consumed readily.

HABITAT: Prefers aquatic habitats in subterranean caves and mine tunnels. Type specimen taken in deep pool at depth of about 3 feet.

ELEVATION: 5,245 ft. (1,600 m).

PLANT COMMUNITY: Unknown

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 1996)
[C2 USDI, FWS 1991, 1994]
[C2 USDI, FWS 1989]

STATE STATUS: 1B (AGFD SWAP 2012)

OTHER STATUS: Bureau of Land Management Sensitive
(USDI, BLM AZ 2010)
Not Forest Service Sensitive (USDA, FS
Region 3 2007)
[Forest Service Sensitive USDA, FS Region
3 1988, 1999]

MANAGEMENT FACTORS: Threats include groundwater pollution and groundwater depletion. Management should include surveys of wet cave habitats to better determine distribution and number of populations, and monitoring of groundwater quality and levels, in known areas of distribution.

PROTECTIVE MEASURES TAKEN: Unknown

SUGGESTED PROJECTS: As specific threats include groundwater pollution by groundwater drawdown, the water table level at the cave should be evaluated. Additional pollutant threats are toxins, siltation and sedimentation. Perhaps searches for *Stygobromus arizonensis*, as well as other amphipods and cavernicolous invertebrates, could be coordinated

with bat projects as this would involve less disturbance for both bats and the invertebrates as well as any other species which may use cave habitat.

LAND MANAGEMENT/OWNERSHIP: USFS - Coronado National Forest and private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.
- Holsinger, J.R. 1974. Systematics of the subterranean amphipod genus *Stygobromus* (Gammaridae), Part I: species of the Western United States. Smithsonian contributions to zoology. Number 160. Smithsonian Institution Press. City of Washington. pp. 47-49.
- Johnson, R. 1992. Preliminary summary for Candidate Category 2 invertebrates, excluding snails. USDI, U.S. Fish and Wildlife Service, Phoenix, Arizona. p. 19.
- NatureServe Explorer: An online encyclopedia of life [web application]. 2003. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>. (Accessed: November 4, 2003).
- Pennak, R.W. 1989. Amphipoda (scuds, sideswimmers) Fresh-water invertebrates of the United States. John Wiley & Sons, Inc. New York. 3: 474-488.
- USDA, Forest Service Region 3. 1988. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 2007. Regional Forester's Sensitive Species List.
- USDI, Bureau of Land Management Region 2. 2010. Arizona BLM Sensitive Species List.
- USDI, Fish and Wildlife Service. 1989. Endangered and Threatened Wildlife and Plants; Animal Notice of Review. Federal Register 54(4): 565.
- USDI, Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 56(225): 58834.
- USDI, Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 59(219): 59026.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species. Federal Register 61(40): 7596-7613.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

John Holsinger - Department of Biology, Old Dominion University, Norfolk, Virginia

ADDITIONAL INFORMATION:

According to an unattributed status review dated November 7, 1984, "Apparently this cave-caverns and underground lakes are only partially explored and are difficult to negotiate. It seems quite likely that other water habitats in the system may also have *Stygobromus*."

According to an unattributed undated USDI, FWS report, *S. arizonensis* known only from three specimens; two collected at a cave on the Flying "H" Ranch and one from a mine near Paradise, Arizona. *S. arizonensis* has not been collected since 1963. Undescribed specimens of *Stygobromus* have also been taken from Sycamore Creek, about 32 miles NE of Phoenix. Morphologically, these individuals are very similar to *S. arizonensis* and may be an additional locale for the species but their exact status remains to be thoroughly assessed.

Revised: 1992-03-24 (DBI)
1993-06-17 (DBI)
1995-06-19 (DBI)
1997-03-03 (SMS)
2003-11-07 (AMS)

To the user of this abstract: you may use the entire abstract or any part of it. We do request, however, that if you make use of this abstract in plans, reports, publications, etc. that you credit the Arizona Game and Fish Department. Please use the following citation:

Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.